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DESCRIPTIONS OF FIVE NEW SPECIES OF ORTHOPTERA FROM TONKIN.

BY JAMES A. G. REHN.

PHASMIDÆ.

Phryganistria grandis n. sp.

Type: ♂; Tonkin, Indo-China. [A. N. S. Phila.]

Allied to *P. sarmentosa* Westwood from Sylhet, but differing in the larger size, the greater number of medium-sized spines on the ventral margins of the median and caudal femora, and the presence of a strong distal spine on each of the same margins, as well as the proportionately slenderer abdomen.

Size very large; form very slender; surface glabrous. Head about equal to the pronotum in length, somewhat narrowed caudad, and with the caudal section of the occiput with four longitudinal subparallel impressed lines; eyes rather prominent, globose; ocelli absent; antennæ when extended caudad reaching nearly to the caudal margin of the second abdominal segment, first antennal joint moderately depressed. Pronotum distinctly longer than broad; cephalic margin slightly arcuate-emarginate, caudal margin subtruncate; transverse depression slightly bent caudad in the middle, a faint trace of a longitudinal depression in the cephalic section, none in the caudal section. Mesonotum but little shorter than the metanotum, median segment and first segment of the abdomen nearly seven times the length of the pronotum, subequal except in the caudal fourth where it is slightly and gradually expanded. Metanotum (including median segment) slightly more than two-thirds the length of the mesonotum; median segment slightly less than a third the length of the remainder of the metanotum; cephalic half subequal, evenly expanding in the caudal half. Abdomen exceeding the head and thoracic segments in length by more than the length of the head, as a whole subequal in width, the slight enlargement of the segments at their articulation with contiguous segments giving the abdomen the appearance of a section of bamboo; first segment very slightly longer than the head and pronotum together, second and third subequal and slightly longer than the first, fourth and fifth subequal and slightly longer than the second and third, sixth segment two-thirds the length of the fifth,

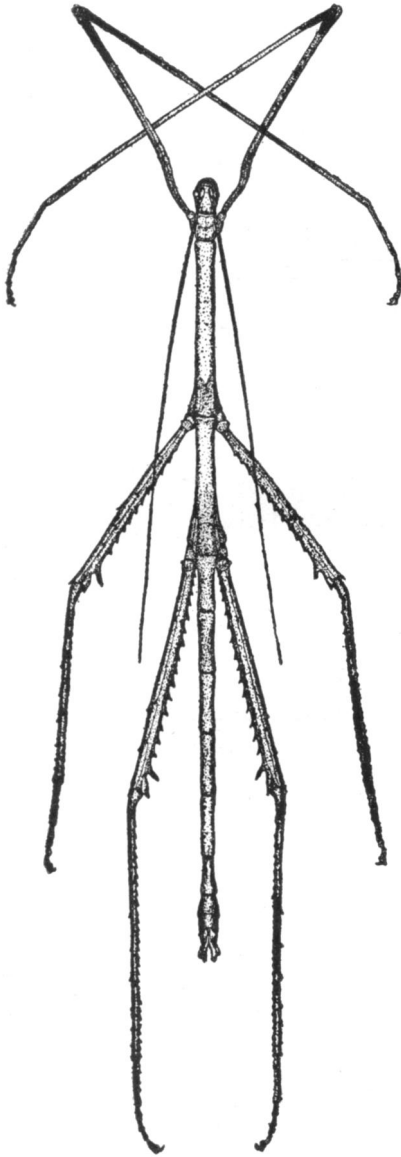


FIG. 1.—*Phryganistria grandis* n. sp.
Dorsal view of male type. (One-half natural size.)

seventh segment about half the length of the sixth, compressed and deep, eighth segment compressed, as deep as and slightly shorter than the seventh segment, ninth segment with its extreme length about equal to the seventh and eighth united, strongly compressed, tectate and carinate dorsad, bearing two lateral digitiform processes which enclose a deep V-shaped emargination, the processes being rounded distad and bearing a number of short recurved spines on their inner faces; cerci slender, simple, strongly curved distad; subgenital opercule extending to the apex of the eighth dorsal segment, not produced, the distal margin straight, the dorsal margin rounded-angulate, the ventro-caudal angle blunt-rectangulate. Cephalic femora slightly longer than the head, pro- and mesonotum, somewhat compressed, multicarinate, basal flexure short but very distinct, dorso-cephalic margin with a number (14 to 18) of rather irregularly distributed spines; cephalic tibiae considerably exceeding the femora in length, as long as the six proximal abdominal segments in length, very slender and with the margins unarmed; cephalic metatarsi distinctly longer than the remaining segments of the tarsi

united; arolia present. Median femora in length equal to the

mesonotum and half of the pronotum, rather robust, strongly carinate, the dorsal carinæ with a few short spines on each but the caudal with a greater number than the cephalic, ventral margins with a series of strong spines, 12 to 14 in number, in addition to which is placed distad a very strong acute spine, the genicular lobes are spiniform and the ventral face bears a median longitudinal series of 6 or 7 fine spines; median tibiæ very slightly longer than the femora, slightly curved proximad, all the margins spined but the ventrals with a much greater number than the dorsals; metatarsi about equal to the remaining tarsal joints, all more robust than in the cephalic limbs. Caudal femora reaching nearly to the apex of the fourth abdominal segment, dorsal margins with very few spines, ventral margins armed as the median femora, the large distal spine and genicular lobes similar in form, and the lateral series numbering 16 to 17 spines, the median ventral series 9 to 10 in number; caudal tibiæ similar to the median in structure but longer; caudal metatarsi distinctly longer than the remaining tarsal joints.



FIG. 2.—*Phryganistria grandis* n. sp. Lateral view of the apex of male abdomen. (Natural size.)

General color ferruginous, pale on the head and distad on the abdomen, the greater portion of the mesothorax and the cephalic section of the metathorax wood brown, the former washed with malachite green. Antennæ blackish brown. Ventro-lateral margins of the median and caudal femora dull oil green; spines tipped with black.

Measurements.

Length of body,	198 mm.
Length of head,	7.5 "
Length of pronotum,	7 "
Length of mesonotum,	46 "
Length of metanotum (including median segment),	34.5 "
Length of cephalic femur	63.8 "
Length of median femur,	48.5 "
Length of caudal femur,	58 "
Length of caudal tibia,	70.5 "

The type only has been examined.

TETTIGONIDÆ.

*Chondrodera*¹ *maxima* n. sp.

Type: ♀; Tonkin, Indo-China?² [A. N. S. Phila.]

¹ It appears from the literature on this genus that Brunner misinterpreted the shape of the mesosternum and metasternum, and should have placed this genus, in his revision of the Pseudophyllinæ, under 4 instead of 4¹ of the *Phyllomima*.

² Some doubt is attached to this locality.

Allied to *C. notatipes* and *C. subvitrea* Karsch from West Africa, but differing in the greater size, the deeper lateral lobes of the pronotum, the smaller eye, the differently shaped tegmen and the lesser number of transverse veins in the same. From *C. borneensis* Brunner it is readily separated by the presence of a longitudinal spurious vein in the anal field of the tegmen, and in the strongly spined and but slightly ciliate femora.

Size moderately large; form generally compressed. Head broad, somewhat flattened cephalad; occiput not elevated, straight, rounded

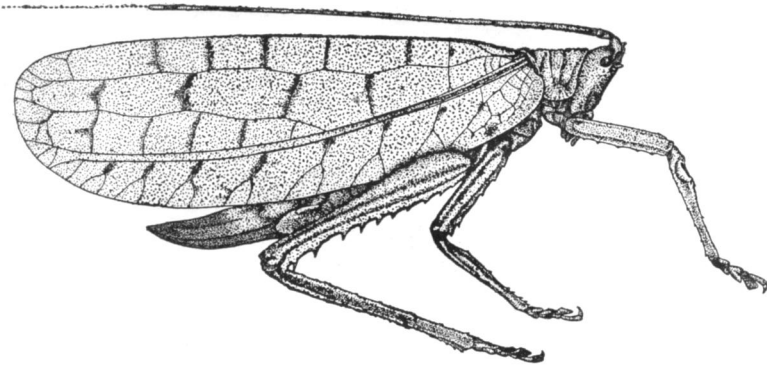


FIG. 3.—*Chondrodera maxima* n. sp. Lateral view of type. ($\times 1\frac{1}{2}$.)

transversely; fastigium produced, extending slightly beyond the antennal scrobes, acute, moderately sulcate distad; eyes rather small, exserted and quite prominent, subglobose; antennæ with the margins of the scrobes touching mesad, first joint large, subcylindrical, joints beyond the second poorly defined, in an incomplete condition extending to the distal third of the tegmen. Pronotum somewhat saddle-shaped, the lateral lobes moderately flaring ventrad, surface with a number of blunt tubercles; cephalic margin obtuse-angulate with the immediate angle truncate, caudal margin arcuate with a slight median emargination; longitudinal median sulcus distinct, precurrent, bearing in its depression a blunt median carina on the prozona (proper) and metazona, on the latter becoming more

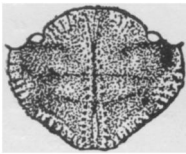


FIG. 4.—*Chondrodera maxima* n. sp. Dorsal view of female pronotum. ($\times 2$.)

conspicuous caudad by the shallower character of the sulcus; median sulcus flanked through nearly its entire length by a pair of series of rather irregularly placed tubercles; sulci separating the prozona, mesozona and metazona very distinct and deep, the meso-

metazonal one particularly heavy; lateral portions of the caudal margins of the disk somewhat elevated; lateral lobes slightly longer than deep, caudal margin with a distinct but shallow elytral sinus, ventral margin sinuate obtuse-angulate, the margin supplied with low tubercles which are the terminations of low subobsolete ridges radiating from a point on the ventral section of the lateral lobes. Prosternum unarmed. Mesosternum distinctly but not greatly transverse, the foramina large and well separated. Metasternum strongly transverse, the cephalic margin slightly broader than the mesosternum, caudal section regularly narrowed, the foramina nearer the caudal margin, transverse and connected by a rather broad sulcus. Tegmen rather coriaceous in texture, the greatest width (excluding the anal field) contained slightly more than three times in the length; dorsal outline when viewed laterally (excluding the horizontal anal field) nearly straight, costal margin slightly arcuate cephalad, strongly arcuate distad; apex dorsad and rather narrowly rounded, costal field with a distinct rounded proximal lobe; costal field with the mediastine vein short, oblique, anterior radial vein sending nine principal oblique rami to the costal margin, the most of which are bifurcate in the distal portion of their length; radial ramus issuing distinctly but not greatly proximad of the middle of the tegmen, the area between this and the posterior radial vein with six principal transverse veins, which enclose areas roughly quadrate in shape; anterior ulnar vein undulate, reaching to the apex of the tegmen, the area between the radial ramus and this vein having five principal transverse veins; area between the two ulnar veins with seven principal transverse veins; anal area narrow but continued to very near the apex of the tegmen, and bearing in addition to one principal precurrent though erratic longitudinal vein several others of similar character in the proximal section, short transverse veins numerous. Wings in repose reaching almost to the tips of the tegmina. Abdomen moderately compressed; supra-anal plate slightly longitudinal, rounded, the apex emarginate and a shallow longitudinal median depression is present on the proximal half, ciliate; ovipositor about twice as long as the pronotum, heavy, hardly curved, the dorsal margin nearly straight and with a slight basal emargination, ventral margin regularly arcuate, apex acute, dorsal margin and short distal section of the ventral margin finely serrate; subgenital plate short, transverse trigonal, the apex with a V-shaped emargination. Cephalic femora about as long as the head and pronotum, carinate, the ventral margins with four to six blunt spines; cephalic tibiae slightly longer than the femora, bullae perforate and expanded on both sides, dorsal carinae with one

short spine on the caudal, ventral carinæ both with a number (6 to 7) of short spines; tarsi with the third joint very broad. Median femora about as long as the cephalic, more compressed, deeper, ventro-cephalic margin strongly carinate and armed with five short spines, ventro-caudal margin armed with a number of very small spines, the margin not strongly carinate like the ventro-cephalic; median tibiæ slightly longer than the femora, compressed, carinate, ventral margins armed with seven small spines. Caudal femora not quite half the length of the tegmen, moderately compressed, and considerably inflated in the proximal half, cephalic face bearing two longitudinal depressions, ventro-cephalic margin lamellate and armed with ten or eleven flattened spines, which are small proximad and increase to a considerable size distad; caudal tibiæ about equal to the femora in length, compressed, carinate, the dorso-cephalic margin armed with four short spines, the dorso-caudal with twelve to fourteen larger lamellate spines, the ventral margins with about seven rather small spines on each margin.

General color very dull canary yellow, becoming saffron yellow on the limbs. Head touched with saffron yellow; eyes walnut brown; antennæ with widely placed annuli of walnut brown. Pronotum with the median longitudinal area faintly washed with lilac. Tegmina with the principal transverse veins bordered and touched with patches and lines of wine purple, the proximal portion of the sutural margin faintly washed with the same color. Ovipositor clay-color, the distal half and the entire ventral margin seal brown. Limbs with the spines either wholly or in part black.

Measurements.

Length of body (exclusive of ovipositor),	43	mm.
Length of pronotum,	8.5	"
Greatest width (ventral) of pronotum,	10	"
Length of tegmen,	61	"
Greatest width of tegmen,	20	"
Length of caudal femur,	27.5	"
Length of ovipositor,	19.5	"

The type only has been examined.

Anabropsis³ **tonkinensis** n. sp.

Type: ♀; Than-Moi, Tonkin, June-July. (Frühstorfer.) [A. N. S. Phila.]

Allied to *A. frater* (Brunner),⁴ supposed to be from India, but differ-

³ *Schenobates* of authors, cf. Rehn, *Canad. Entom.*, XXXIII, p. 272, 1901.

⁴ *Verhandl. K. K. Zool.-bot. Gesell. Wien*, XXXVIII, p. 275.

ing in the smaller size and the fewer spines on the margins of the caudal tibiae, ten instead of fourteen in number. Brunner's species is very briefly described and based on a male, but the specimen in hand differs in the lesser length of the body and of the caudal femora and tibiae, as well as the fewer tibial spines.

Size rather large (compared with American species of the genus); form somewhat compressed; surface entirely glabrous, polished. Head short and broad, occiput rounding toward the fastigium and bearing a very slight median longitudinal sulcus, which is continued nearly to

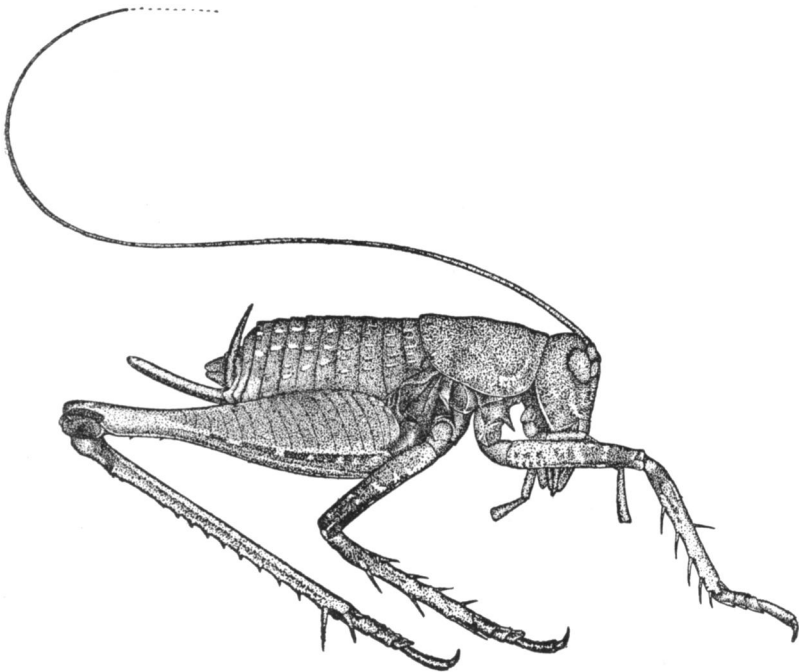


FIG. 5.—*Anabropsis tonkinensis* n. sp. Lateral view of type. (About $\times 2$.)

the extremity of the compressed fastigium, which latter is separated from the vertex by a broad and shallow depression; frontal fastigium touching the fastigium of the vertex; paired ocelli large, placed on the lateral faces of the fastigium, median ocellus placed closer to the apex of the facial fastigium than to the clypeal margin; eyes ovoid, flattened cephalad, slightly prominent; antennal scrobes little elevated, proximal and second antennal joints subcylindrical, the second considerably smaller than the first, remainder of the antennae slender, moniliform,

about twice the length of the body, the third joint slightly longer than the proximal and second joint together. Mandibles, clypeus and labrum large and produced as is usual in the genus; palpi large, with the first and second joints subequal, the third slightly longer than the others and distinctly longer than the labrum. Pronotum hardly arched longitudinally, distinctly arched transversely; cephalic margin truncate, caudal margin arcuato-truncate; lateral lobes very greatly longer than deep, the greatest depth in the cephalic section; no median carina present, but an extremely fine median sulcus extends the whole length of the pronotum; distinct transverse sulci two in number, one near the cephalic margin, the other slightly caudad of the middle and extending cephalo-laterad of the axis of the pronotum and forming oblique broad depressed areas on the lateral lobes. Tegmina very minute, not half as long as the exposed lateral portion of mesonotum, pad-like. Mesonotum, metanotum and abdominal segments provided dorsad with a slight but distinct median carina, laterad the distal section of each segment is provided with a number of short welt-like ridges. Supra-anal plate small, trigonal, depressed with the margins elevated; ovipositor rather short and weak, slightly arcuate, tapering, apex moderately acute, margins unarmed. Prosternum with a pair of very long spines, nearly erect, the tips needle-like; mesosternum with a pair of similar spines, which, however, are shorter and broader than those on the prosternum; metasternum with a pair of blunt triangular lobes. Cephalic femora moderately compressed, slightly longer than the pronotum, margins and genicular lobes unarmed; cephalic tibiae slightly longer than the femora, dorsal margins each with a distal spine and the cephalic with one median one, ventral margins each with five spines, the proximo-caudal small, as is also the proximo-dorsal; cephalic tarsi very slightly more than half the length of the tibiae arolia absent. Median femora equal to the cephalic in length and unarmed; median tibiae very slightly longer than the femora, armed on the dorso-cephalic margin with three spines and on the dorso-caudal with four spines, the ventral margins each armed with five spines. Caudal femora slightly shorter than the length of the body, strongly inflated in the proximal two-thirds, the distal third subequal, pagina sculptured with a regular series of clear-cut oblique lines, caudo-ventral margin with five to seven short spines on the distal section; caudal tibiae about as long as the femora, dorsal margins each armed with ten fixed spines, ventral margins armed with three short mobile spines on the cephalic margin and one on the caudal margin, while three pairs of distal spurs are present, the proximal being very large

on each margin and spiniform; caudal tarsi with the distal joint about equal to the proximal in length.

General color dorsad seal brown, ventrad including the limbs pale orange-ochraceous. Head solid color dorsad, ventrad of the dorsal color laid over cream-buff, the facial fastigium clear cream-buff; mouth parts, except clypeus, of the ventral color; eyes broccoli brown; antennæ of the ventral color except for the three proximal segments which maculate or suffuse with seal brown. Pronotum slightly sprinkled with buffy laterad. Abdomen with the welt-like ridges buffy, as are also the styles and ovipositor. Cephalic and median femora strongly blotched and suffused with seal brown distad; median and caudal tibiæ with proximal section washed with seal brown. Caudal femora with the pagina sprinkled with seal brown, the carina immediately ventrad of the pagina strongly blotched with the same in the proximal two-thirds and the genicular lobes and arches of the same color; caudal tibiæ with the genicular region touched with seal brown. All spines and spurs narrowly tipped with seal brown.

Measurements.

Length of body (exclusive of ovipositor),	28.5 mm.
Length of antennæ,	circa 62 "
Length of pronotum,	9.5 "
Length of caudal femur,	25 "
Length of ovipositor,	8.5 "

The type alone has been examined.

***Diastrammena longipes* n. sp.**

Type: ♂; Than-Moi, Tonkin. June-July. (H. Frühstorfer.) [A. N. S. Phila.]

Allied to *D. unicolor* Brunner ⁵ from Siberia, China and Tenasserim, but differing in the very much longer limbs and the very marked coloration.

Size rather large; body in life probably covered in the greater part with golden scales, of which traces remain. Head short, broad and deep; occiput slightly rounded into the fastigium, which is short, rather broad, deeply sulcate and bifurcate; frontal fastigium low, separated from the fastigium of the vertex by a considerable space; ocelli small; eye ovate, flattened cephalad, moderately prominent, considerably shorter than the infra-ocular portion of the genæ; antennal scrobes not elevated, proximal joint short subcylindrical, second joint smaller, subcylindrical, remainder moniliform, very nearly five and one-half times

⁵ *Verhandl. K. K. Zool.-bot. Gesell. Wien*, XXXVIII, p. 299.

the length of the body; mandibles, clypeus and labrum moderately prolonged; palpi long and slender, the proximal joint quite short, the second and third longer and subequal, the distal slender, gradually enlarging, over half again as large as the second. Pronotum arched transversely and with faint indications of lateral shoulders; cephalic margin truncate, caudal margin subtruncate; lateral lobes slightly longer than deep, the cephalic section of the margin oblique, mesad

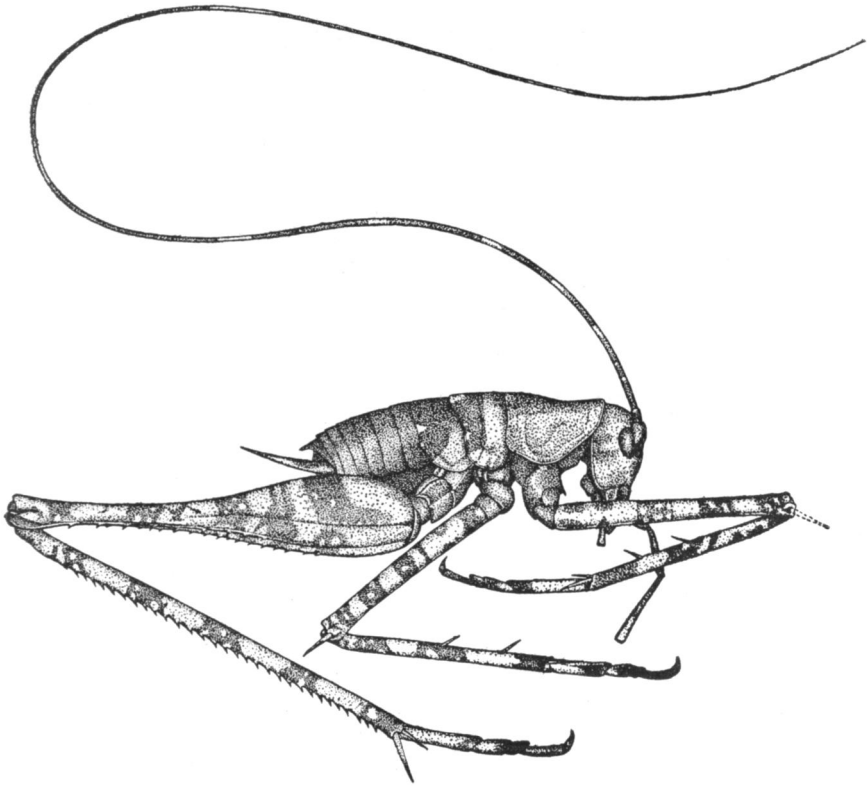


FIG. 6.—*Diestrammena longipes* n. sp. Lateral view of type. ($\times 2$.)

with a rounded obtuse angle and caudad with the same, the caudal margin itself nearly straight. Mesonotum with the caudal margin obtuse-angulate; metanotum very slightly obtuse-angulate. Abdomen slightly tectate; cerci styliiform, slightly shorter than the pronotum. Cephalic femora very slightly longer than the head and thoracic segments, armed on the ventro-cephalic margin with three spines and on the

cephalic genicular lobe with one; cephalic tibiae equal to the femora in length, unarmed dorsad except for a short distal spine on the caudal margin, ventral margins each armed with two mobile spines, the distal ventral margin with one short median spine, spurs two in number, comparatively short, subequal; cephalic tarsi compressed, two-thirds the length of the tibiae, metatarsi slightly longer than the remaining joints, distal joint much slenderer than the others, arolia absent. Median femora very slightly shorter than the head and thoracic segments, ventro-cephalic margin with a single spine in the distal section, ventro-caudal margin unarmed, both genicular lobes with large mobile spines, that of the cephalic lobe slightly shorter than the other; median tibiae somewhat longer than the femora, the ventral margin with four paired spines and one median one on the distal margin, spurs rather short, the caudal the longer and that not more than a third the length of the metatarsus; tarsi similar to the cephalic. Caudal femora elongate, nearly half again as long as the body, considerably inflated in the proximal half, slender in the distal half with a slight genicular enlargement, ventro-cephalic face of the proximal inflated portion with several deep longitudinal impressions, the cephalic ventral carina much lower than the caudal, which is moderately lamellate, cephalic armed with ten spines in the distal section, the caudal armed with sixteen spines in the distal two-thirds, genicular lobes each with a very short mesad spine; caudal tibiae slightly longer than the femora compressed, ventral margins unarmed, dorso-cephalic margin with thirty-two fixed spines, dorso-caudal with thirty, spurs in three pairs, the dorsal much the larger and with the caudal one slightly longer than the cephalic and but little shorter than the metatarsus; caudal tarsi similar to the others in structure but slightly larger and more robust.

General color mars brown, the caudal margins of the thoracic and abdominal segments rather irregularly and broadly marked with seal brown, the median sections of the segments, however, being clear or nearly clear mars brown, while the mesonotum and metanotum bear irregular touches of sulphur yellow. Face ventrad of the eyes and of the antennae touched with vandyke brown; eyes walnut brown; antennae seal brown, the proximal joints paler and maculate with seal brown, joints beyond the second with two characters of annulations of lemon yellow, a broad annulation and a number of narrow annulations between each broad one, both characters of annulations becoming distant distad. Limbs with the base color straw yellow with a faint touch of lavender on the proximal portions of the femora, all strongly annulate

with clove brown, the number of annuli on the caudal limbs being four principal ones on the femur, five on the tibia and two on the tarsus.

Measurements.

Length of body,	21.5 mm.
Length of antenna,	circa 118 "
Length of distal joint of the palpus,	5.2 "
Length of caudal femur,	27.5 "
Length of caudal tibia,	29 "

The type is unique.

***Diestrammena palpata* n. sp.**

Type: ♂; Than-Moi, Tonkin. June-July. (H. Frühstorfer.) [A. N. S. Phila.]

Allied to *D. unicolor* Brunner and *D. longipes* described above, but differing from *D. unicolor* in the much longer limbs as is the case with *D. longipes*, from which *palpata* differs in the very long palpi and the different coloration.

Size rather large; form somewhat compressed. Head with the occiput descending to the fastigium which is short and deeply, but very narrowly, divided; facial fastigium separated from the fastigium of the vertex by a considerable space; eye elongate subreniform; antennæ over five times the length of the body, the proximal joint large, subcylindrical, second joint small and very short, remaining joints moniliform; palpi very slender, elongate, first and second joints short, third and fourth quite long, subequal, fifth very long, over half again as long as the fourth. Pronotum rounded transversely; cephalic margin subtruncate, caudal margin slightly projecting, roundly obtuse-angulate, no lateral angles present; lateral lobes slightly longer than deep, the ventral margin bluntly obtuse-angulate. Mesonotum distinctly obtuse-angulate caudad; metanotum with the caudal margin very slightly arcuate. Abdomen compressed. Cephalic femora somewhat longer than the head and thorax, slender, very slightly expanded proximad, but otherwise subequal, ventral margins unarmed, cephalic genicular lobe with a very short fixed spine, caudal genicular lobe with a long mobile spine; cephalic tibiæ very slightly longer than the femora, unarmed dorsad, ventral margins with four paired spines and one median one on the distal border, principal spurs considerably shorter than the large genicular spine on the cephalic femora; cephalic tarsi considerably more than half the length of the tibiæ, compressed, the metatarsus slightly more than half the tarsal length, arolia absent. Median femora distinctly but not greatly shorter than the cephalic femora, similar in structure but with a large mobile spine on the cepha-

lic genicular lobe, in length, however, shorter than that on the caudal lobe; median femora and tibiæ as in the cephalic limbs but shorter. Caudal femora elongate, slightly more than twice the length of the median, considerably inflated in the proximal half, cephalic ventral margin unarmed, caudal margin with a number of spines, closely

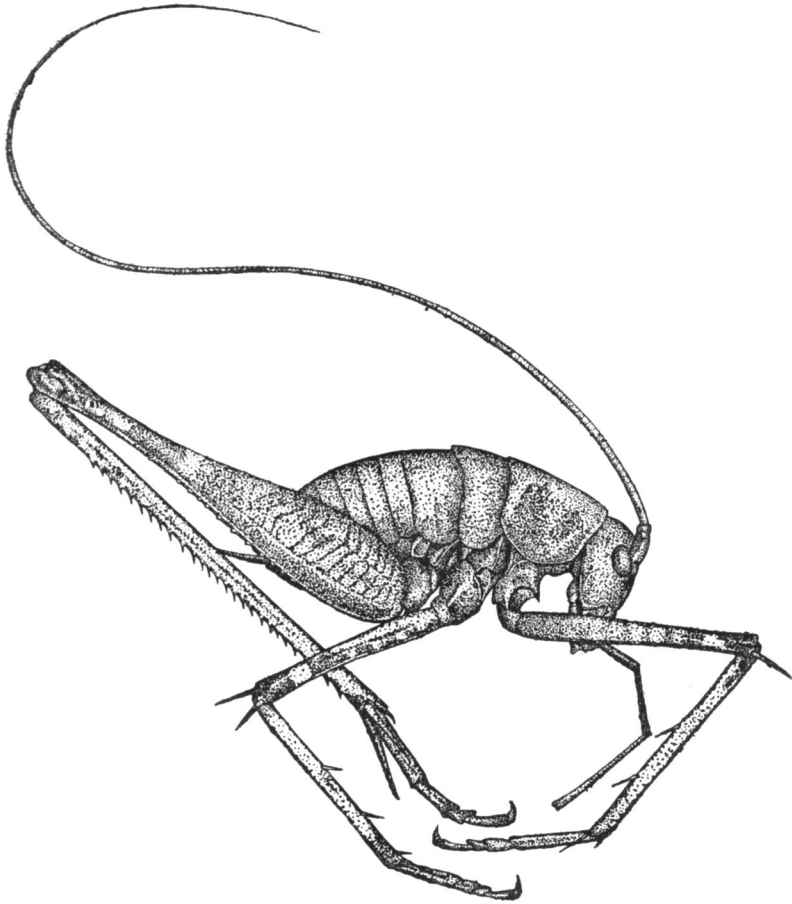


FIG. 7.—*Diestrammena palpata* n. sp. Lateral view of type. ($\times 2$.)

placed proximad, sparsely distributed distad; caudal tibiæ slightly longer than the femora, dorsal margins with thirty to thirty-four fixed spines, dorsal spurs very large, the caudal as long as the metatarsus; metatarsi about as long as the remaining tarsal joint.

General color burnt umber, meso-dorsal region suffused with clove brown. Eyes vandyke brown; antennæ annulate much as *D. longipes*, but the color is duller, the larger annulations narrower and the smaller

ones more numerous; palpi dark except the distal joint which is pale. Cephalic and median limbs cream-buff, proximal three-fourths of the femora obscurely maculate with mummy brown, a clear light pregenicular annulus present, genicular region of the femora and tibiæ seal brown, remainder of tibiæ of the pale ground color. Caudal femora cream buff overlaid and mottled with burnt umber proximad and clove brown distad; caudal tibiæ, except for a certain amount of scattered proximal clove brown maculation, cream buff, spines tipped with dark brown, extreme distal portion of the tibiæ and caudal margins of the tarsal joints washed with seal brown.

Measurements.

Length of body,	21	mm.
Length of antenna,	circa 120	"
Length of distal joint of the palpus,	8	"
Length of caudal femur,	29	"
Length of caudal tibia,	30.5	"

The type is the only specimen examined.